

PHNL031158

PCT/IB2004/051772

CLAIMS:

1. Apparatus for protecting a reticle used in semiconductor chip fabrication from contamination, the apparatus comprising a pellicle member 1) disposed over said reticle with a space (9) therebetween by connection means (30), characterized in that said pellicle member (1) comprises a central portion (1A) and an outer portion (1B), said central (1A) and outer portions (1B) being separate from each other, said central portion (1A) having a fixed position and tilt angle, in use, and said connection means (30) being configured to permit movement of said outer portion (1B) in a direction substantially perpendicular to said reticle in response to changes in gas pressure difference between said space (9) and the atmosphere.
5. 2. Apparatus according to claim 1, wherein the connection means comprises one or more flexible connection members (30).
10. 3. Apparatus according to claim 2, wherein said connection members are arranged to extend and contract in response to said pressure differences so as to permit movement of the outer portion (1B) of the pellicle member (1) in a direction substantially perpendicular to the reticle.
15. 4. Apparatus according to claim 1, wherein the connection means (30) comprises one or more brackets slidably or otherwise connecting the outer portion (1B) of the pellicle member (1) to a support frame (3), such that it can move in a direction substantially perpendicular to the reticle.
20. 5. Apparatus according to claim 1, further comprising a support frame (3) having longitudinal guides in which the edges of the outer portion (1B) of the pellicle member (1) are arranged to be received in a gas-tight manner, such that it is permitted to move up and down relative to the reticle by sliding up and down the gas-tight guides.

PHNL031158

PCT/IB2004/051772

8

6. Apparatus according to any one of the preceding claims, wherein the inner portion (1A) of the pellicle member (1) is fixed with regard to its position and tilt angle by means of one or more anchor points (50).

5 7. Apparatus according to claim 6, wherein said anchor points (50) may extend from selected positions on a reticle base plate (5), on which the reticle is supported or provided.

10 8. Apparatus according to any one of the preceding claims, wherein the pellicle member (1) is formed of silicon glass.

9. Apparatus according to any one of claims 1 to 8, wherein the reticle is provided on a reticle base plate (5), which base plate (5) is provided with a support frame (3) to which the outer portion (1B) of the pellicle member (1) is connected.

15 10. A method of protecting a reticle used in semiconductor chip fabrication from contamination, the method comprising the steps of providing a pellicle member (1) and disposing it over said reticle with a space (9) therebetween by connection means, characterized in that said pellicle member (1) comprises a central portion (1A) and an outer portion (1B), said central (1A) and outer portions (1B) being separate from each other, said central portion (1A) having a fixed position and tilt angle, in use, and said connection means (30) being configured to permit movement of said outer portion (1B) in a direction substantially perpendicular to said reticle in response to changes in gas pressure difference between said space (9) and the atmosphere.

25 11. A method of fabricating a semiconductor chip, comprising the steps of providing a reticle and apparatus for protecting said reticle from contamination, according to any one of claims 1 to 9, providing a patterned mask (6) on said reticle, and irradiating said reticle through the central portion (1A) of the pellicle member (1) and the mask (6).

30 12. A semiconductor chip fabricated in accordance with the method of claim 11.